WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

MANUAL STAGE HEIGHT STATION

STATION ID: 32F060

STATION NAME: Dry Creek near Mouth

WATER YEAR: WY 2008

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Introduction

Watershed Description

Dry Creek is a tributary of the Walla Walla River. The confluence is just south of the town of Lowden. Dry Creek's watershed is mainly used for dryland wheat agriculture, with only sparse forest in the headwaters. It drains the lower slopes of the Blue Mountains southeast of the town of Dixie.

Gage Location

Dry Creek near Mouth is located off of Highway 12 near the town of Lowden. The staff gage is located on the right bank, underneath the highway bridge.

Table 1.

Drainage Area (square miles)	244 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 03' 46" N
Longitude (degrees, minutes, seconds)	118° 34' 31" W
Primary Gage Index Type	Staff
Secondary Gage Index Type	Tapedown from bridge

Error Analysis

Overall Rating Error Percentage	10.6

Rating Table(s)

Table 2. Rating Table Summary

Rating Table No.	6	402	302
Period of Ratings	7/15/07 to 10/24/07	10/25/07 to 12/3/07	12/4/07 to 4/9/08
Range of Ratings (cfs)	0.10 to 174	0.43 to 174	0.09 to 113
No. of Defining Measurements	5	5	7
Rating Error (%)	11.4	9.8	11.1

Rating Table No.	202	303	403
Period of Ratings	4/10/08 to 5/21/08	5/22/08 to 6/12/08	6/13/08 to 9/30/08
Range of Ratings (cfs)	0.25 to 174	0.09 to 113	0.43 to 174
No. of Defining Measurements	6	7	5
Rating Error (%)	11.2	11.1	9.8

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

The water year began under Rating #6. Rating #402 went into effect in mid-November 2007. The continued decrease of instream vegetation in the channel led to this shift. In early December 2007, a precipitation event led to channel fill resulting in shift to Rating #302. The next rating (#202) began in late April 2008. This was caused by seasonal run-off resulting in channel scour. The rating shifted again in mid-June 2008, to Rating #303. An increase of instream vegetation growth led to channel fill. The last rating of the year began shortly after Rating #303 went into effect. This rating shift (#403) was due to seasonal run-off resulting in channel scour.

High variability exists at this site, due to significant instream vegetation and silt build-up.

Discrete Flow Record

Table 3. Discrete Flow Record Summary

Number of Discrete Stage Readings	46	
Maximum Observed Stage (feet) and Date	7.41	3/14/2008
Maximum Predicted Discharge (cfs) and Date	109	3/14/2008
Minimum Observed Stage (feet) and Date	3.97	10/9/2007
Minimum Predicted Discharge (cfs) and Date	0.20	10/9/2007
Range of Stage (feet) and Discharge (cfs)	4.98	108

Narrative

Eight discharge measurements were taken, ranging from 0.20 to 58 cfs. Two readings were calculated based on a regression between staff gage and a secondary gage index, in this case a tapedown from the bridge. At high flows this was needed, because the staff was underwater.

Modeled Discharge

Table 4. Model Summary

Model Type (Slope conveyance, other, none)	n/a
Range of Modeled Stage (feet)	n/a
Range of Modeled Discharge (cfs)	n/a
Valid Period for Model	n/a
Model Confidence	n/a

Surveys

Table 5. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Activities Completed
